Getting to Know SOI's Statistical Services Branch:
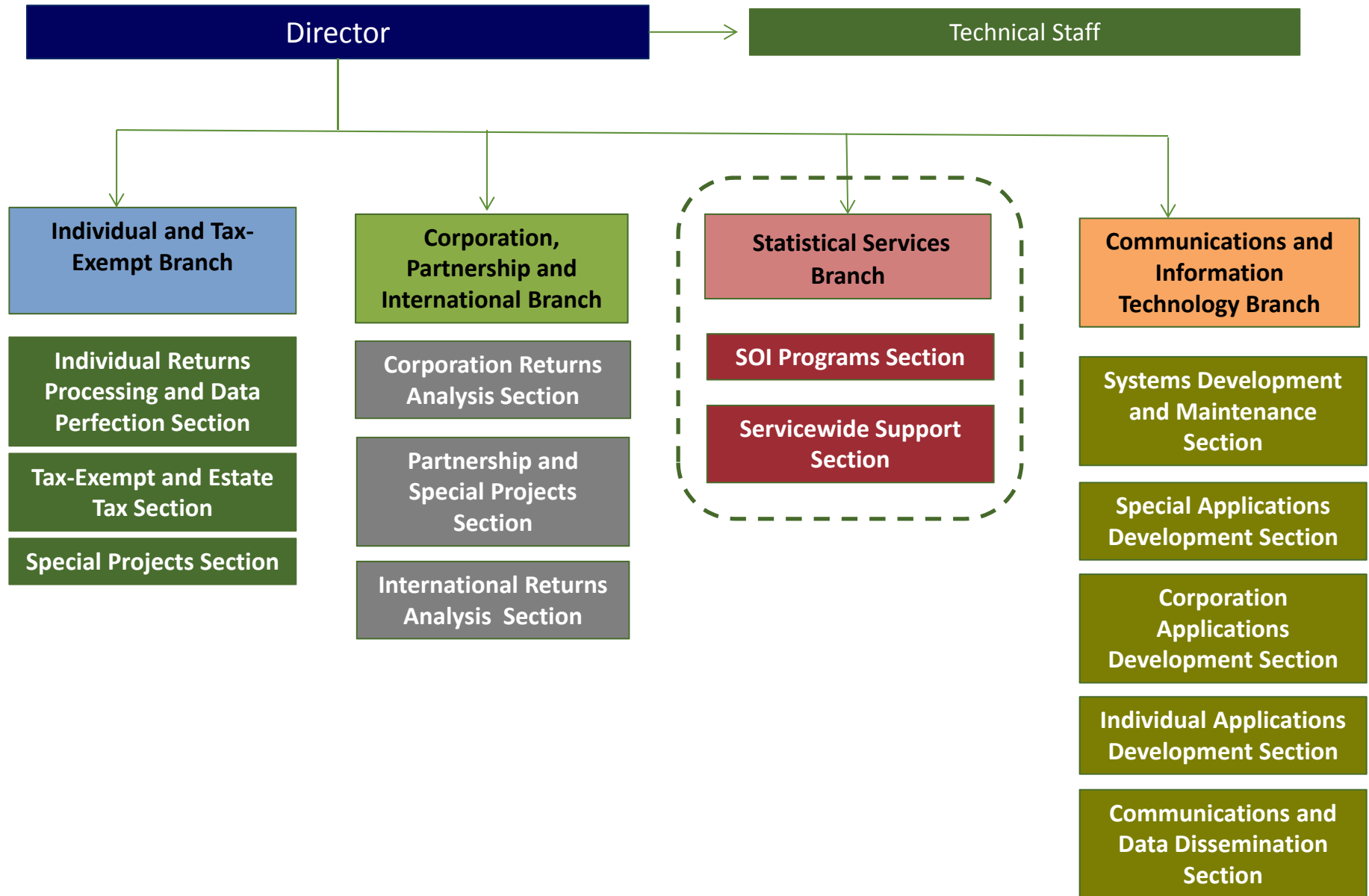
FOCUS ON PROJECTIONS DATA

Outline of Session

- Overview of Statistical Services Branch

- Projections Data – Products and Methodology

- Comments from Mary Batcher, BDS Data Analytics

- Discussion – Q&A

History

- SOI Programs Section and Servicewide Support Section have existed for many years.

- Prior to 2011, together in Statistical Computing Branch

- In 2011, RAAS DMD was formed, Statistical Computing Branch dissolved

- FY 2017 – RAAS realignment and SOI reorganization

SOI New Organizational Structure

Director → **Technical Staff**

Individual and Tax-Exempt Branch

- **Individual Returns Processing and Data Perfection Section**
- **Tax-Exempt and Estate Tax Section**
- **Special Projects Section**

Corporation, Partnership and International Branch

- **Corporation Returns Analysis Section**
- **Partnership and Special Projects Section**
- **International Returns Analysis Section**

Statistical Services Branch

- **SOI Programs Section**
- **Servicewide Support Section**

Communications and Information Technology Branch

- **Systems Development and Maintenance Section**
- **Special Applications Development Section**
- **Corporation Applications Development Section**
- **Individual Applications Development Section**
- **Communications and Data Dissemination Section**

Statistical Services Branch

Chief - Laura Rasmussen

SOI Programs

Tammy Rib – Section Chief

Richard Collins

Tracy Haines

Kim Henry

Yan Liu

Elliot Mountjoy

Valerie Testa

Bertrand Uberall

Servicewide Support

Tim Castle – Section Chief (9/17)

Rachael Hooker

Diane Milleville

Michelle Sloan

Katie Belfield

Ronnie Walsh

Michelle Chu

Jeff Matsuo

Andre Palmer

Donna Baldwin

SOI Programs Section

Mission

To develop sample designs, monitor the execution of these designs and develop estimation procedures and variance estimates for all SOI programs

Functions

- Design samples and monitor sample selection to ensure data integrity

- Develop estimation techniques: outlier detection & correction, adjustment for missing returns, calculation of post-stratification weights, and evaluation of sampling errors

- Document the methods used and the limitations of the published data

- Evaluate the implemented sample design to continually satisfy the users' requirements.

Functions, cont'd.

- Conduct empirical studies concerning sampling and non-sampling errors

- Assess the latest statistical developments; identify and recommend potentially useful statistical techniques that may meet the specific needs of the Division

- Evaluate results of statistical projects from government and private contractors

- As directed, represent SOI on special internal/external committees on statistical issues

Projects with a Designated Math Stat

- Individual

- Corporations

- Partnerships

- Sole Proprietorships

- Foreign Income and Tax Programs

  - Foreign Activity of U.S. Corporations; Activity of Foreign Corporations in the U.S.; Foreign Controlled U.S. Corporation

- Tax-Exempt Organization Programs

  - Private Foundations and Charitable Trusts; Exempt Organizations; Exempt Organizations' Unrelated Business Income

- Estate Tax Returns

- Gift Tax Returns

Servicewide Support Section

Purpose of the Team

Provide general statistical consulting services on request to other organizations throughout the IRS

Provide positive exposure for SOI

Support SOI and RAAS projects when appropriate

Customers

- Internal to the IRS (and now external)

- From almost every business unit (e.g. W&I, SBSE, TAS, CFO, RPO), including RAAS and SOI

- Work directly with subject-matter analysts and managers

- Provide executive briefings as needed

- Customer relationships range from short-term (single meeting) to long-term (20 years)

Services

- Performance Measures

- Surveys (External & Internal)

- OMB Clearance

- TIGTA/GAO Audit Support

- Ad-Hoc Statistical Support

- Projections and Forecasting – new!

Projections and Forecasting

Outline

- Data sources

- Projections methodology

- Accuracy of prior projections

- Projections products

- Customers and how projections are used

- Customer feedback

- Online access to publications

Data Sources

IRS Administrative Data

- IRS Masterfile data

- Reports from Business Operating Divisions (BODs)

- Compliance Data Warehouse

- IMF and BMF Processing Center reports

- Refund data

External Data

- IHS Global: provides forecasts of economic and demographic input variables

Projections Methodology

- Depending on the properties of each filing category, the forecasting methods are selected to capture and extrapolate historical filing trends

- Projections are based on statistical forecasting techniques such as regression models incorporating key economic and demographic input variables provided by IHS Global Inc., time series techniques, growth rates, and historical ratio methods

- The projection method used depends on the form type, availability of historical data, and applicability of relevant economic and demographic forecasts

- Baseline projections are generated and "off-model" adjustments are used to incorporate legislative/program changes that are not captured in the historical filing trends

SOI Projections of Tax Return Filings

Projections include

- Calendar year and fiscal year forecasts

- Multi-year forecasts

- By major tax return types

- By medium of filings

- Geographical areas

- IRS Business Operating Divisions

- Examination classes

Projections Products

- Five publications are updated annually or semiannually

- Publications content:

  - Overview

  - Data Sources

  - Methodology

  - Legislative and Administrative Changes

  - Tables with prior year actual data and four to nine years of projected data

  - Measure of Projections Accuracy

- Other products

  - Projections of payment volumes

 - Weekly individual forecasts

  - Ad hoc special projects

IRS Publication Number	Title of Publication	Typical Updates
6292	Fiscal Year Return Projections for the United States	June, September
6961	Calendar Year Projections of Information and Withholding Documents for the United States and IRS Campuses	August
6187	Calendar Year Projections of Individual Returns by Major Processing Categories	October
6186	Calendar Year Return Projections for the United States and IRS Campuses	November
6149	Calendar Year Return Projections by State	December

Publication 6292

Fiscal Year Return Projections for the United States: 2017–2024

The Internal Revenue Service (IRS) *Publication 6292* includes U.S.-level Fiscal Year (FY) projections of individual and business income tax returns to be filed by the major return categories, including selected detail by the IRS business operating divisions. *Publication 6292* also includes breakouts by filing methods and is updated semi-annually.

Projections of the Number of Income Tax Returns To Be Filed, Fiscal Years 2017–2024
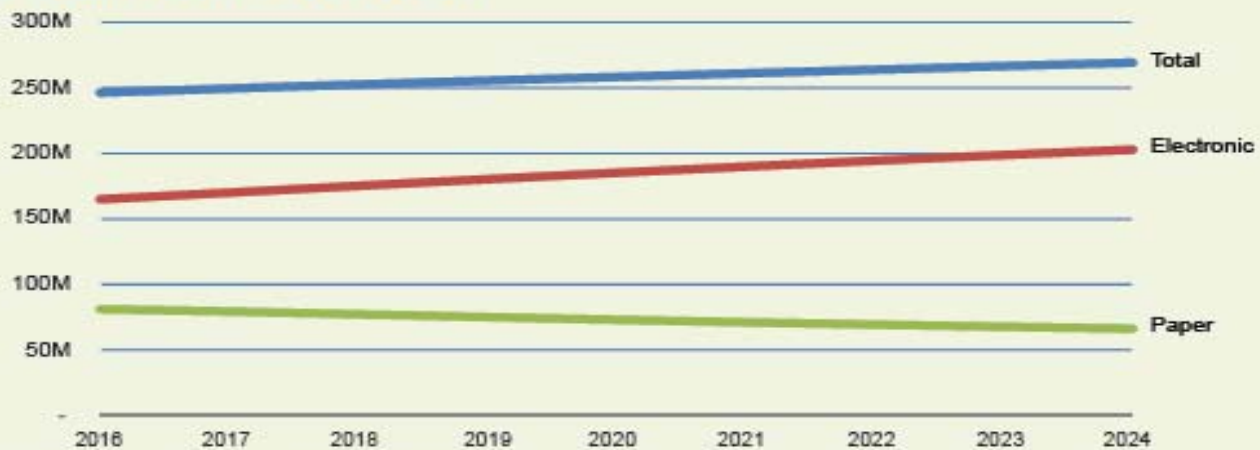
Number of income tax returns for FY 2016 are actual filings.

Significant Trends Found in This Update of *Publication 6292*

- The grand total income tax return filings were 246.9 million in Fiscal Year 2016. After FY 2016, grand total income tax return filings are projected to grow at an average annual rate of 0.9 percent, reaching 265.1 million

Actual Income Tax Return Filings for FY 2016

169.1 million electronic filings

Table 1. Fiscal Year Projections of the Number of Returns To Be Filed with IRS, 2017–2024

Type of Return	Actual— FY 2016	Projected 2017	2018	2019	2020	2021	2022	2023	2024
Grand Total	246,945,921	249,818,700	251,608,900	253,964,400	256,292,500	258,541,700	260,710,900	262,891,000	265,071,700
Paper Grand Total	77,847,394	74,104,200	71,653,300	69,302,300	67,138,100	65,113,100	63,190,500	61,343,400	59,731,900
Electronic Grand Total	169,098,527	175,714,500	179,955,700	184,662,100	189,154,400	193,428,600	197,520,400	201,547,600	205,339,800
Total Primary Returns	222,643,678	223,976,900	225,989,400	227,886,400	229,728,900	231,476,500	233,143,700	234,831,600	236,519,300
Individual Income Tax, Total	150,711,378	152,413,600	154,189,500	155,937,000	157,622,500	159,232,100	160,772,900	162,350,300	163,934,400
Forms 1040, 1040-A, and 1040-EZ, Total	149,804,477	151,501,200	153,264,900	154,999,800	156,672,800	158,269,700	159,797,800	161,362,600	162,934,000
Paper Forms 1040/1040-A/1040-EZ	18,802,365	17,495,800	16,257,900	15,070,700	13,930,200	12,832,800	11,775,600	10,755,500	9,931,600
Electronic Forms 1040/1040-A/1040-EZ	131,002,112	134,005,400	137,007,000	139,929,200	142,742,600	145,436,900	148,022,300	150,607,100	153,002,500
Forms 1040-NR/NR-EZ/C	722,697	736,100	755,200	774,200	793,200	812,300	831,300	850,400	869,400
Electronic Form 1040-NR	n.a.	176,900	322,300	442,800	540,400	612,800	665,000	703,400	733,100
Forms 1040-PR and 1040-SS	184,204	176,300	169,500	163,000	156,500	150,100	143,700	137,400	131,000
Electronic Forms 1040-PR and 1040-SS	41,703	42,900	43,900	44,600	45,300	45,800	46,200	46,600	46,800
Individual Estimated Tax, Form 1040-ES, Total	23,101,441	22,357,600	22,238,800	22,082,400	21,958,300	21,840,300	21,723,100	21,606,500	21,490,600
Paper Form 1040-ES	22,945,539	22,192,900	22,063,600	21,896,300	21,761,500	21,633,200	21,505,800	21,378,900	21,252,900
Electronic (Credit Card) Form 1040-ES	155,902	164,700	175,200	186,100	196,800	207,100	217,300	227,600	237,700
Fiduciary, Form 1041, Total	3,206,758	3,199,600	3,212,500	3,225,300	3,238,200	3,251,000	3,263,900	3,276,800	3,289,600
Paper Form 1041	668,203	552,100	498,100	457,700	425,200	397,500	372,800	349,900	328,100
Electronic Form 1041	2,538,555	2,647,500	2,714,400	2,767,600	2,813,000	2,853,500	2,891,100	2,926,900	2,961,600
Fiduciary Estimated Tax, Form 1041-ES	645,521	642,300	642,800	642,800	642,800	642,800	642,800	642,800	642,800
Partnership, Forms 1065/1065-B, Total	4,005,907	4,077,200	4,173,700	4,261,500	4,341,600	4,414,500	4,480,900	4,541,400	4,596,500
Paper Forms 1065/1065-B	693,915	604,400	565,000	537,000	516,300	499,800	485,300	471,300	456,700
Electronic Forms 1065/1065-B	3,311,992	3,472,800	3,608,700	3,724,500	3,825,300	3,914,700	3,995,600	4,070,100	4,139,800
Corporation Income Tax, Total	6,990,829	7,048,500	7,123,700	7,189,600	7,247,000	7,296,800	7,339,900	7,376,800	7,408,400
Paper Corporation Returns, Total	1,706,507	1,545,900	1,444,200	1,365,600	1,304,400	1,256,500	1,218,800	1,188,800	1,164,800
Electronic Corporation Returns, Total	5,284,322	5,502,600	5,679,500	5,824,000	5,942,600	6,040,300	6,121,100	6,188,100	6,243,600
Form 1120, Total	1,807,102	1,780,800	1,750,100	1,719,900	1,690,200	1,661,100	1,632,400	1,604,200	1,576,600
Paper Form 1120	496,621	436,600	383,400	339,700	303,200	272,400	246,300	223,900	204,500
Electronic Form 1120	1,310,481	1,344,200	1,366,600	1,380,200	1,387,100	1,388,600	1,386,100	1,380,300	1,372,000
Form 1120-C	8,679	9,400	9,400	9,500	9,500	9,500	9,500	9,500	9,500
Form 1120-F	47,179	49,700	52,200	54,800	57,400	60,000	62,600	65,200	67,800
Paper Form 1120-F	24,349	23,800	23,400	23,000	22,700	22,500	22,300	22,200	22,000
Electronic Form 1120-F	22,830	25,900	28,800	31,800	34,700	37,500	40,300	43,000	45,700
Form 1120-H	255,047	255,700	259,000	262,100	265,000	267,800	270,400	272,800	275,100
Forms 1120-FSC/L/ND/PC/REIT/RIC/SF	41,234	43,200	45,100	47,000	48,900	50,800	52,600	54,500	56,400
Form 1120-S, Total	4,831,588	4,909,700	5,007,900	5,096,300	5,176,000	5,247,800	5,312,400	5,370,600	5,423,100
Paper Form 1120-S	880,577	777,200	723,800	684,300	655,100	633,600	617,700	605,900	597,200
Electronic Form 1120-S	3,951,011	4,132,500	4,284,100	4,412,000	4,520,900	4,614,200	4,694,700	4,764,700	4,825,800

Accuracy of Projections

- Mean Absolute Percentage Error (MAPE) is used as a metric to measure our forecasting performance

- The MAPE table presents the accuracy of our national-level projections by major return categories. This analysis covers only the major return categories projected on a calendar year basis and serves as a general measure for assessing the overall reliability of our U.S.-level return projections

- MAPE tables are presented in most of our publications

Customer Feedback

- Projections Customers' Requirements Meetings are held annually with core customers to discuss product timeline, program changes and their impact, and changes in their needs

- Customer satisfaction surveys are conducted annually to gauge the satisfaction level of our products in meeting their needs. Starting in FY 2017, projections customers will be surveyed by the Servicewide Support customer satisfaction survey

Projections Customers

- Internal customers – Customer Account Services, Online Services, CFO, LOCKBOX program office

- External customers – Federal Reserve Board, Federal and state agencies, tax return preparers, tax software developers, and researchers from other private companies and universities

How Projections Are Used

- Budget and workload planning

- Reporting purposes

- Research and analysis

Online Access to Publications

- Access publications online from the Tax Stats site, under Products and Publications, click on Projections

https://www.irs.gov/statistics/projections-of-federal-tax-return-filings

Background

- I retired from EY in June 2015, after 17 years.

- At EY, I led the statistical group in National Tax.

- Before EY, I was at SOI where I created and led the Stat Consulting group.

- At that time the two statistical sections were in different branches.

- They are now in the same branch, along with the forecasting group.

Statistical Groups

Consulting

Meet and deal

SPSS

Small data sets

Short deadlines

Sampling

Sampling knowledge

SAS

Large data sets

Long deadlines

Opportunity

- OK to just keep as three separate groups without a lot of interaction

- Better to create and foster synergy

- Learn each others skills and strengths

- View each group as a resource (if needed) to the other groups

Getting there

- Monthly lunch and learn for all three groups

- Start with software benefits and examples

- Rotate presenting group

- Joint projects or activities if/when feasible

- Treat the reorganization as an exciting new opportunity for growth through synergy

Discussion, Q&A